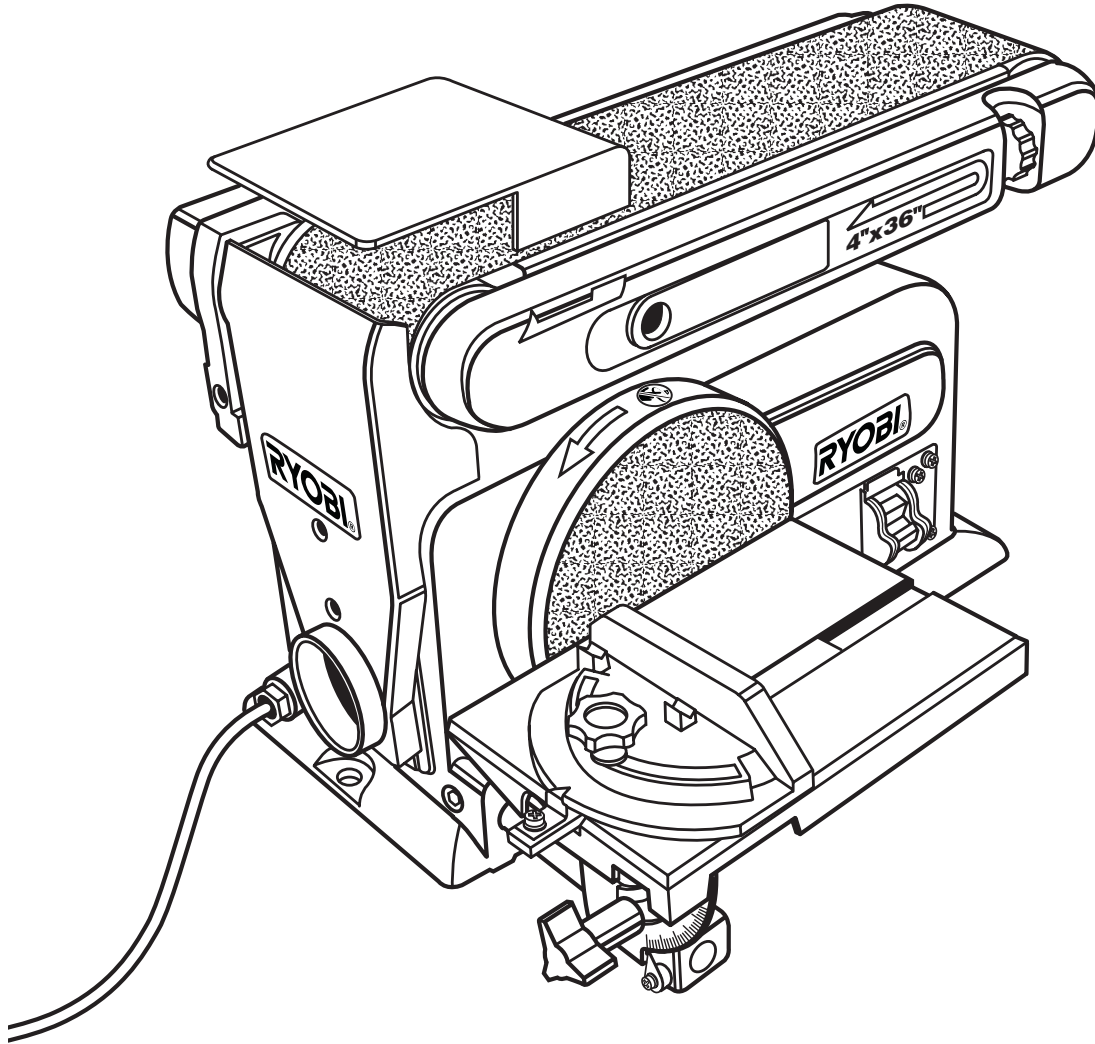


# RYOBI®

## OPERATOR'S MANUAL BELT/DISC SANDER MODEL BD4600



### THANK YOU FOR BUYING A RYOBI BENCHTOP BELT/DISC SANDER.

Your new Belt/Disc Sander has been engineered and manufactured to Ryobi's high standards for dependability, ease of operation, and operator safety. Properly cared for, it will give you years of rugged, trouble-free performance.

**⚠ CAUTION:** Carefully read through this entire operator's manual before using your new machine.

Pay close attention to the Rules for Safe Operation, Warnings, and Cautions. If you use your machine properly and only for what it is intended, you will enjoy years of safe, reliable service.

Please fill out and return the Warranty Registration Card so we can be of future service to you.

Thank you again for buying Ryobi tools.

**SAVE THIS MANUAL FOR FUTURE REFERENCE**

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## PRODUCT SPECIFICATIONS

Belt Size	4 in. (101.6 mm) x 36 in. (914.4 mm)	Table Size	8 1/2 in. x 5 3/4 in. (215.9 mm x 146 mm)
Belt Speed	1900 SF/M	Table Tilt	0°-45°
Belt Tilt	0°-90°	Input	120V AC, 60Hz, 4.3 amps
Disc Size	6 in. (152.4 mm)	Motor	1/2 HP Induction
Disc Speed	3600 RPM	Net Weight	53 lbs (24 kg)



**Look for this symbol to point out important safety precautions. It means attention!!! Your safety is involved.**

### WARNING:



The operation of any power tool can result in foreign objects being thrown into your eyes, which can result in severe eye damage. Before beginning tool operation, always wear safety goggles or safety glasses with side shields and a full face shield when needed. We recommend Wide Vision Safety Mask for use over eyeglasses or standard safety glasses with side shields. Always wear eye protection which is marked to comply with ANSI Z87.1.

# RULES FOR SAFE OPERATION

Safe operation of this power tool requires that you read and understand this operator's manual and all labels affixed to the tool. Safety is a combination of common sense, staying alert, and knowing how your tool works.

## READ ALL INSTRUCTIONS

- **KNOW YOUR POWER TOOL.** Read the operator's manual carefully. Learn its applications and limitations as well as the potential hazards.
- **GUARD AGAINST ELECTRICAL SHOCK** by preventing body contact with grounded surfaces such as pipes, radiators, ranges, refrigerator enclosures.
- **KEEP GUARDS IN PLACE** and in good working order.
- **REMOVE ADJUSTING KEYS AND WRENCHES.** Get in the habit - before turning on tool - that hex keys and adjusting wrenches are removed from tool.
- **KEEP THE WORK AREA CLEAN.** Cluttered work areas and work benches invite accidents. **DO NOT** leave tools or pieces of wood on the machine while it is in operation.
- **DO NOT USE IN DANGEROUS ENVIRONMENTS.** Do not use power tools near gasoline or other flammable liquids, in damp or wet locations, or expose them to rain. Keep the work area well lighted.
- **KEEP CHILDREN AND VISITORS AWAY.** All visitors should wear safety glasses and be kept a safe distance from work area. Do not let visitors contact tool or extension cord while operating.
- **MAKE WORKSHOP CHILDPROOF** with padlocks and master switches or by removing starter keys.
- **DO NOT FORCE THE TOOL** it will do the job better and safer at the rate for which it was designed.
- **USE THE RIGHT TOOL FOR THE JOB.** Do not force the tool or attachment to do a job for which it was not designed for. Use it only the way it was intended.
- **USE THE PROPER EXTENSION CORD.** Make sure your extension cord is in good condition. Use only a cord heavy enough to carry the current your product will draw. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. A wire gage size (A.W.G.) of at least **16** is recommended for an extension cord 25 feet or less in length. If in doubt, use the next heavier gage. The smaller the gage number, the heavier the cord.
- **DRESS PROPERLY.** Do not wear loose clothing, gloves, neckties, rings, bracelets, or other jewelry that could get caught and draw you into moving parts. Non-slip footwear is recommended. Wear protective covering over long hair.
- **ALWAYS WEAR SAFETY GLASSES WITH SIDE SHIELDS.** Everyday eyeglasses have only impact resistant lenses; they are **not** safety glasses.
- **PROTECT YOUR LUNGS.** Wear a face or dust mask if the operation is dusty.
- **PROTECT YOUR HEARING.** Wear hearing protection during extended periods of operation.
- **SECURE WORK.** Use clamps or a vise to hold the work when practical. It's safer than using your hand and frees both hands to operate the tool.
- **DO NOT OVERREACH.** Keep proper footing and balance at all times.
- **MAINTAIN TOOLS WITH CARE.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories.
- **DISCONNECT ALL TOOLS.** When not in use, before servicing, or when changing attachments, all tools should be disconnected.
- **AVOID ACCIDENTAL STARTING.** Be sure switch is off when plugging in any tool.
- **USE RECOMMENDED ACCESSORIES.** Consult this operator's manual for recommended accessories. The use of improper accessories may cause risk of injury.
- **NEVER STAND ON TOOL.** Serious injury could occur if the tool is tipped or if the sanding belt or disc is unintentionally contacted.
- **CHECK DAMAGED PARTS.** Before using the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment of moving parts, binding of moving parts, breakage of parts, mounting and any other conditions that may affect operation. A guard or other part that is damaged must be properly repaired or replaced by an authorized service center to avoid risk of personal injury.
- **NEVER LEAVE TOOL RUNNING UNATTENDED, TURN THE POWER OFF.** Do not leave tool until it comes to a complete stop.
- **DO NOT ABUSE CORD.** Never yank the cord to disconnect it from the receptacle. Keep the cord from heat, oil, and sharp edges.
- **KEEP HANDS AWAY FROM WORK AREA.** Keep hands away from the work area. Restrain any loose clothing, jewelry, long hair, etc. that may become entangled in the tool.
- **KEEP TOOL DRY, CLEAN, AND FREE FROM OIL AND GREASE.** Always use a clean cloth when cleaning. Never use brake fluids, gasoline, petroleum-based products, or any solvents to clean tool.
- **STAY ALERT AND EXERCISE CONTROL.** Watch what you are doing and use common sense. **Do not operate tool when you are tired. Do not rush.**
- **DO NOT USE TOOL IF SWITCH DOES NOT TURN IT ON AND OFF.** Have defective switches replaced by an authorized service center.

# RULES FOR SAFE OPERATION

- **ALWAYS TURN SWITCH OFF** before disconnecting it to avoid accidental starting.
- **ALL REPAIRS, WHETHER ELECTRICAL OR MECHANICAL**, should be made at a Ryobi Authorized Service Center. Use only Ryobi identical replacement parts.
- **SAVE THESE INSTRUCTIONS.** Refer to them frequently and use to instruct other users. If you loan someone this tool, loan them these instructions also.

## **WARNING:**

Some dust created by power sanding, sawing, grinding, drilling, and other construction activities contains chemicals known to cause cancer, birth defects or other reproductive harm. Some examples of these chemicals are:

- lead from lead-based paints,
- crystalline silica from bricks and cement and other masonry products, and
- arsenic and chromium from chemically-treated lumber.

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.

## SAVE THESE INSTRUCTIONS

The purpose of safety symbols is to attract your attention to possible dangers. The safety symbols, and the explanations with them, deserve your careful attention and understanding. The safety warnings do not by themselves eliminate any danger. The instructions or warnings they give are not substitutes for proper accident prevention measures.

### SYMBOL

### MEANING



#### **SAFETY ALERT SYMBOL:**

Indicates danger, warning, or caution. May be used in conjunction with other symbols or pictographs.



**DANGER:** Failure to obey a safety warning will result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



**WARNING:** Failure to obey a safety warning can result in serious injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.



**CAUTION:** Failure to obey a safety warning may result in property damage or personal injury to yourself or to others. Always follow the safety precautions to reduce the risk of fire, electric shock and personal injury.

### **NOTE:**

Advises you of information or instructions vital to the operation or maintenance of the equipment.

# RULES FOR SAFE OPERATION

## IMPORTANT

Servicing requires extreme care and knowledge and should be performed only by a qualified service technician. For service we suggest you return the tool to your nearest **RYOBI AUTHORIZED SERVICE CENTER** for repair. When servicing, use only identical Ryobi replacement parts.

### **WARNING:**

Observe all normal safety precautions related to avoiding electrical shock.

### **WARNING:**

Do not attempt to operate this tool until you have read thoroughly and understand completely all instructions, safety rules, etc. contained in this manual. Failure to comply can result in accidents involving fire, electric shock, or serious personal injury. Save this operator's manual and review frequently for continuing safe operation and instructing others who may use this tool.

## SAFETY AND INTERNATIONAL SYMBOLS

This operator's manual describes safety and international symbols and pictographs that may appear on this product. Read the operator's manual for complete safety, assembly, operating and maintenance, and repair information.



### MEANING

Do not expose to rain or use in damp locations



**DO NOT** reach across the sanding disc to turn the belt/disc sander **ON** or **OFF**. Contact with the sanding disc can result in serious personal injury.

# ELECTRICAL

## EXTENSION CORDS

Use only 3-wire extension cords that have 3-prong grounding plugs and 3-pole receptacles that accept the tool's plug. When using a power tool at a considerable distance from the power source, use an extension cord heavy enough to carry the current that the tool will draw. An undersized extension cord will cause a drop in line voltage, resulting in a loss of power and causing the motor to overheat. Use the chart provided below to determine the minimum wire size required in an extension cord. Only round jacketed cords listed by Underwriter's Laboratories (UL) should be used.

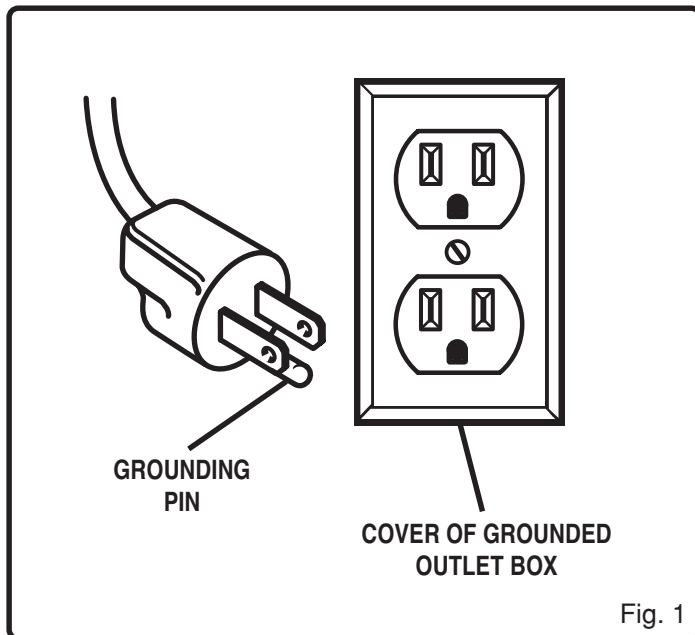
Length of Extension Cord	Wire Size (A.W.G.)
Up to 50 feet	16

When working with the tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters **WA** on the cord's jacket.

Before using an extension cord, inspect it for loose or exposed wires and cut or worn insulation. Repair or replace a damaged or worn cord immediately.

### CAUTION:

Keep the cord away from the work area and position the cord so that it will not be caught on material, tools, or other objects during operation.



## ELECTRICAL CONNECTION

Your Ryobi Belt/Disc Sander is powered by a precision built electric motor. It should be connected to a **power supply that is 120 volts, 60 Hz**. If the machine does not operate when plugged into an outlet, double check the power supply.

## GROUNDING INSTRUCTIONS

In the event of a malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This tool is equipped with an electric cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into a matching outlet that is properly installed and grounded in accordance with all local codes and ordinances.

Do not modify the plug provided. If it will not fit the outlet, have the proper outlet installed by a qualified electrician. Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the electric cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or service personnel if the grounding instructions are not completely understood, or if in doubt as to whether the tool is properly grounded.

Repair or replace a damaged or worn cord immediately.

This tool is intended for use on a circuit that has an outlet like the one shown in *Figure 1*. It also has a grounding pin like the one shown.

# UNPACKING

Your belt/disc sander has been shipped completely assembled except for the sanding disc, disc guard, miter gauge, work support, and worktable.

- Carefully remove all parts from the shipping carton.
- Do not discard the packing material until you have carefully inspected the belt/disc sander, identified all parts, and satisfactorily operated your new tool.
- If all parts have been included, proceed to assembly.
- If any parts are damaged or missing, please call 1-800-525-2579 for assistance.
- Examine all parts to make sure no breakage has occurred during shipping. Any damaged or missing part should be replaced before attempting to use the tool.

**Note:** If any parts are damaged or missing, do not attempt to plug in the power cord and turn the switch on until the damaged or missing parts are obtained and are installed correctly.

## ⚠ WARNING:

Do not allow familiarity with your belt/disc sander to make you careless. Remember that a careless fraction of a second is sufficient to inflict severe injury.

## ⚠ WARNING:

Do not attempt to assemble the belt/disc sander, plug in the power cord, or turn on switch if any parts are damaged or missing. Failure to heed this warning could result in serious personal injury.

# LOOSE PARTS

Check all loose parts with the list below. Assemble according to the instructions on the following pages.

- Sanding Disc
- Disc Guard
- Phillips Screws (2)
- Socket Head Screws, M8 x 12 (2)
- Washers (2)
- Miter Gauge
- Hex Key
- Worktable
- Work Support
- Operator's Manual (not shown)

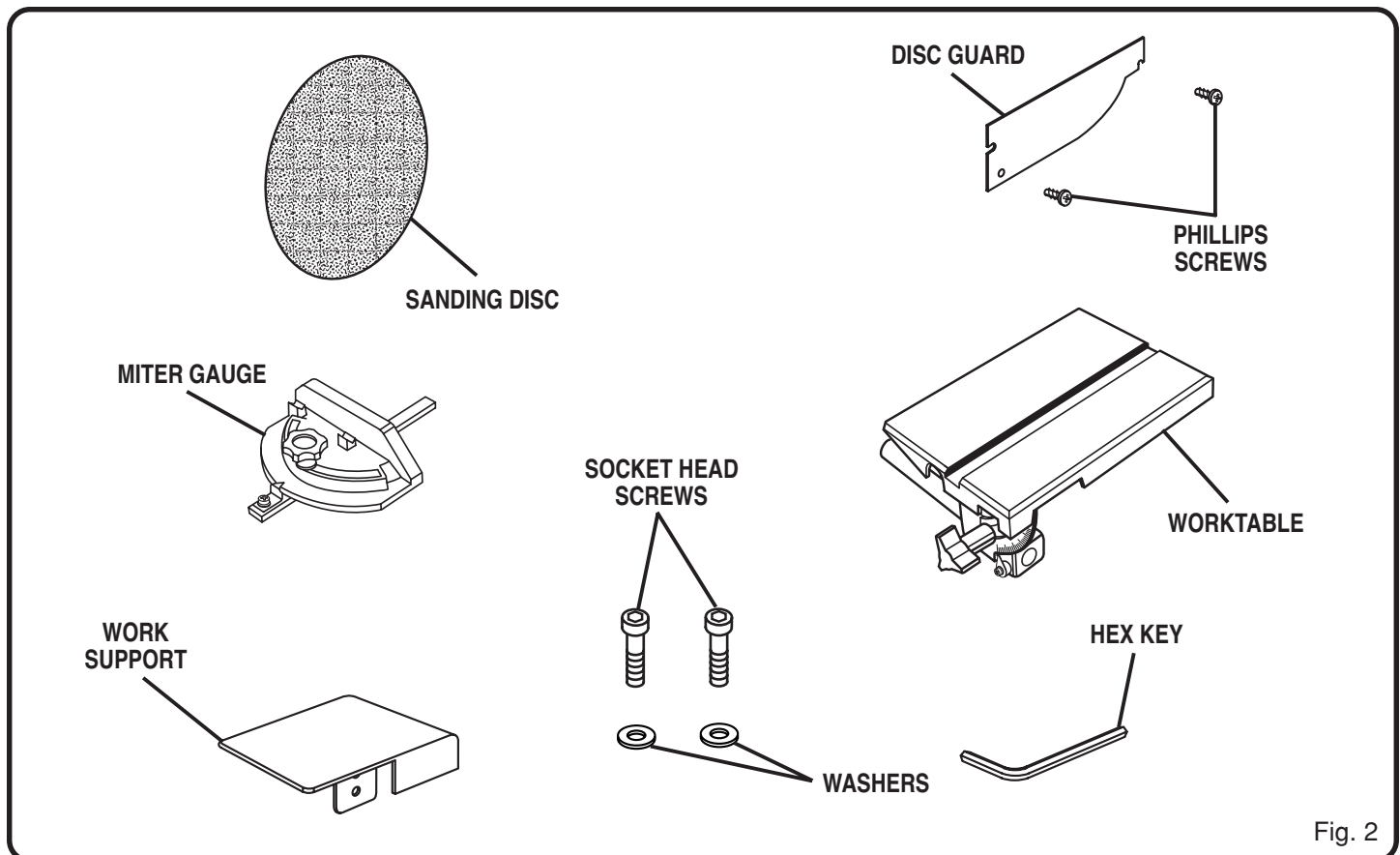


Fig. 2





# ASSEMBLY

## INSTALLING SANDING DISC AND DISC GUARD

See Figure 4.

### WARNING:

Do not connect to power supply until assembly is complete. Failure to comply could result in accidental starting and possible serious injury.

- Remove the backing from the sanding disc.
- Align perimeter of sanding disc with plate and press firmly into position.
- Position disc guard against the lower one-third of the disc, aligning holes as shown in figure 4.
- Using the two phillips head screws, securely tighten the disc guard into place.

## INSTALLING/REPLACING SANDING BELT

See Figure 5.

On the smooth side of the sanding belt, there is a directional arrow. The sanding belt must run in the direction of the arrow.

- Pull the tension lever toward you to release belt tension.
- Place the sanding belt over the drive drum and idler drum with the directional arrows running counterclockwise. Be sure the sanding belt is centered on both drums.
- Push the tension lever back into place to apply the belt tension.

**Note:** The tension lever is spring loaded so use extreme caution when pushing the tension lever back into place to avoid personal injury.

## MOUNTING THE WORKTABLE FOR USE WITH THE DISC SANDER

See Figure 6.

To use the worktable with the disc sander:

- Insert the index pin into the hole as shown in figure 6.
- Position the worktable not further than 1/16 in. (1.6 mm) from the sanding surface.
- Using a hex key, tighten the hex set screw securely.

## MOUNTING THE WORKTABLE FOR USE WITH THE BELT SANDER

See Figure 7.

To use the worktable for vertical sanding:

- Insert the index pin into the hole as shown in figure 7.
- Position the worktable not further than 1/16 in. (1.6 mm) from the sanding surface.
- Using a hex key, tighten the hex set screw securely.

### CAUTION:

To avoid trapping the workpiece or your fingers between the table and the sanding surface, the table edge should NEVER be further from the sanding surface than 1/16 in. (1.6 mm).

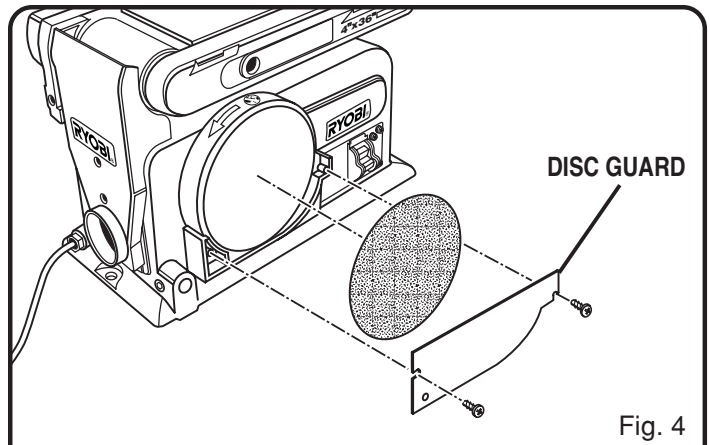


Fig. 4

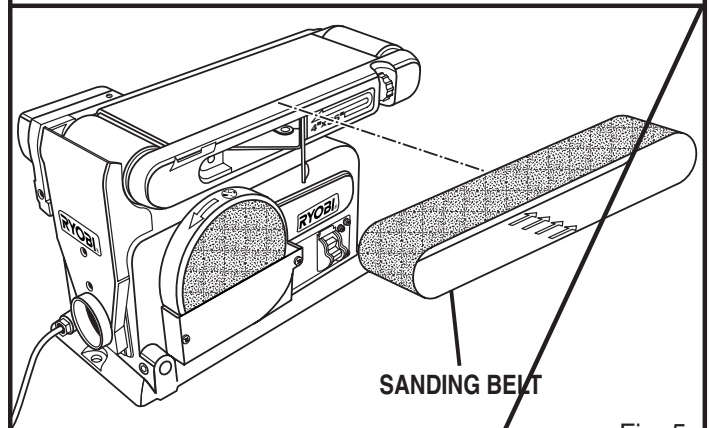


Fig. 5

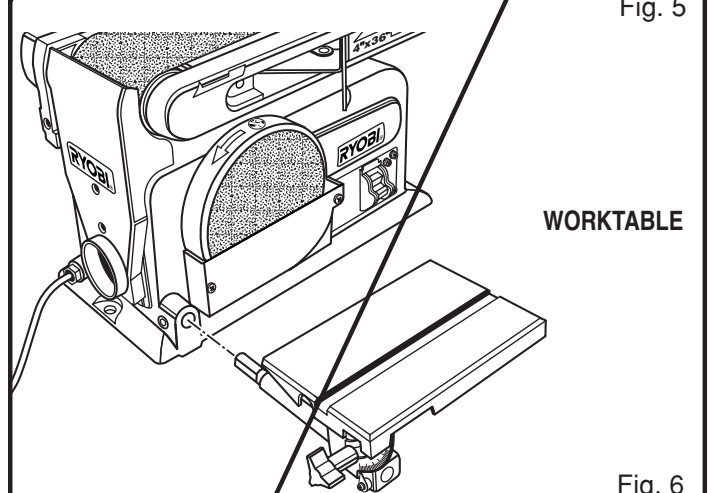
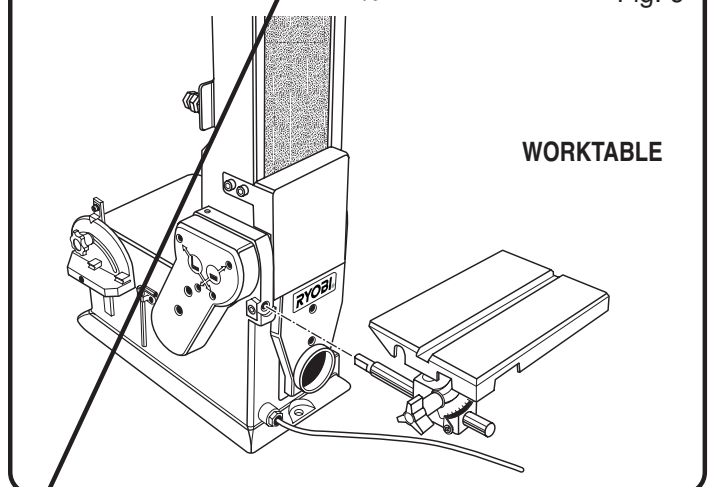


Fig. 6



# ASSEMBLY

## ASSEMBLING WORK SUPPORT

See Figure 8.

- Place the work support over the holes in the side of the tool housing.
- Using a hex key, fasten in place with the washers and socket head screws.

## MOUNTING BELT/DISC SANDER TO WORKBENCH

See Figure 9.

If your belt/disc sander is to be used in a permanent location, it is recommended you secure it to a workbench or other stable surface. When mounting the belt/disc sander to a workbench, holes should be drilled through the supporting surface of the workbench.

- Mark holes on workbench where belt/disc sander is to be mounted using holes in the base as a template for hole pattern.
- Drill holes through workbench.
- Place belt/disc sander on workbench aligning holes in the base with holes drilled in the workbench.
- Insert bolts (not included) and tighten securely with lock washers and hex nuts (not included).

**Note:** All bolts should be inserted from the top. Install the lock washers and hex nuts from the underside of the workbench.

## CLAMPING BELT/DISC SANDER TO WORKBENCH

See Figure 10.

If your belt/disc sander is to be used as a portable tool, it is recommended you fasten it permanently to a mounting board that can easily be clamped to a workbench or other stable surface. The mounting board should be of sufficient size to avoid tipping while belt/disc sander is in use. Any good grade plywood or chipboard with a 3/4 in. (19 mm) thickness is recommended.

- Mark holes on board where belt/disc sander is to be mounted using holes in the base as a template for hole pattern.
- Follow last three steps in section *Mounting Belt/Disc Sander to Workbench*.

If lag bolts are used, make sure they are long enough to go through holes in belt/disc sander base and material the belt/disc sander is being mounted to. If machine bolts are used, make sure bolts are long enough to go through holes in belt/disc sander, the material being mounted to, and the lock washers and hex nuts.

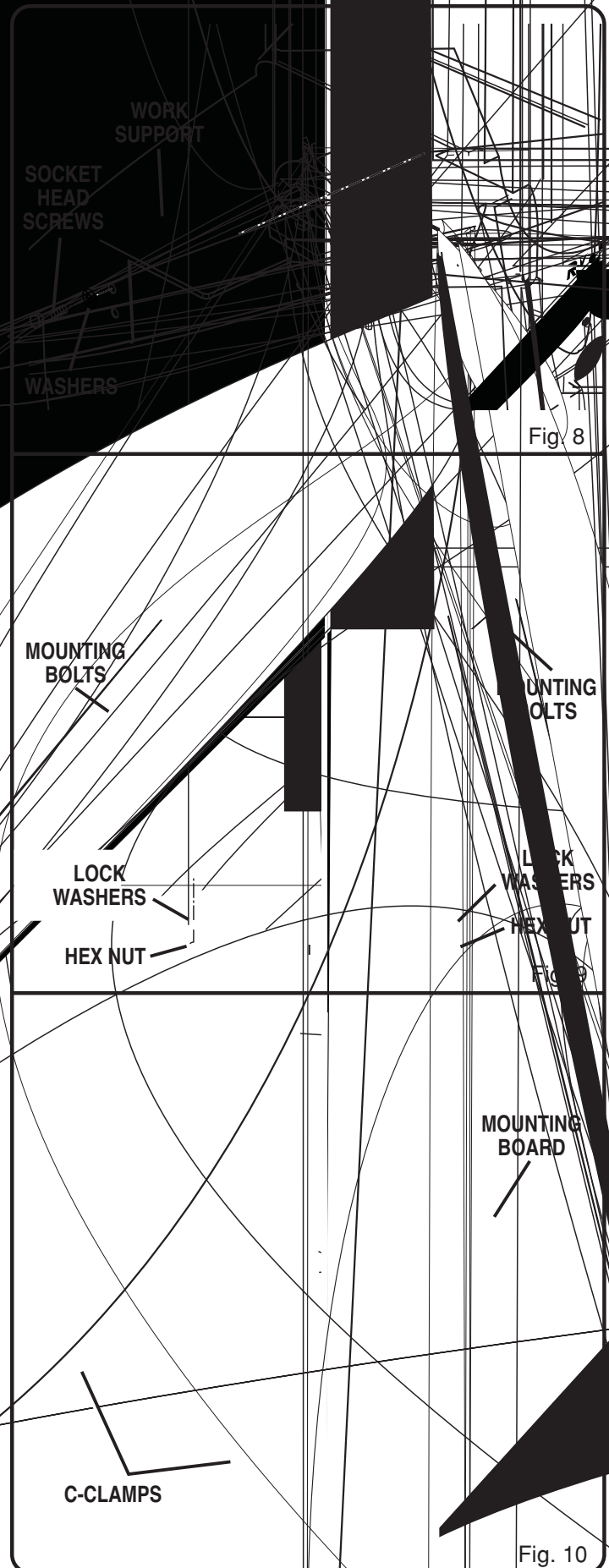


Fig. 8

Fig. 9

Fig. 10

# ADJUSTMENTS

## WARNING:

When performing any adjustment, make sure the belt/disc sander is unplugged from the power supply and the switch is in the OFF position. Failure to heed this warning can result in serious personal injury.

## ADJUSTING THE BELT TRACKING

1.

Turn the belt/disc sander.

### Belt tracking:

If the sanding belt tracks to the left, turn the tracking knob clockwise 1/4 turn. If the sanding belt tends to slide off the idler drum or drive drum, the tracking knob should be adjusted so the belt tracks properly.

### Belt tracking:

If the sanding belt moves toward the disc, turn the tracking knob counterclockwise 1/4 turn.

If the sanding belt moves away from the disc, turn the tracking knob counterclockwise 1/4 turn.

Turn the power switch ON and then immediately OFF again, to stop belt movement. Readjust tracking knob if necessary.

## ADJUSTING THE WORKTABLE TO THE SANDING DISC

2.

Turn the belt/disc sander.

Using a combination square, check the angle of the worktable with the sanding belt.

If the worktable is not 90° with the disc, loosen the table adjustment screw and tilt the table.

Adjust the worktable square to the sanding disc and retighten the table lock knob.

Adjust the adjustment screw beneath the worktable to move the table further or closer to the sanding disc.

## WARNING:

Before attempting to use your belt/disc sander familiarize yourself with all operating features and safety requirements.

## REMOVING THE SWITCH KEY

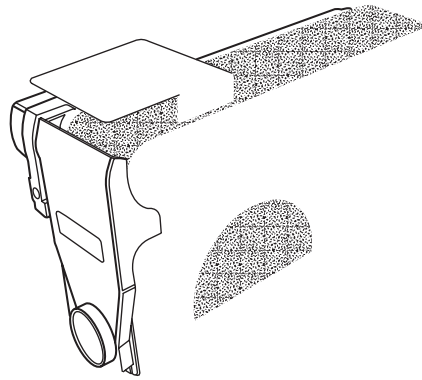
Turn the power switch in the OFF position.

Remove the belt/disc sander has come to a full and complete stop.

Remove the switch key from the switch assembly. Store the key in a safe place.

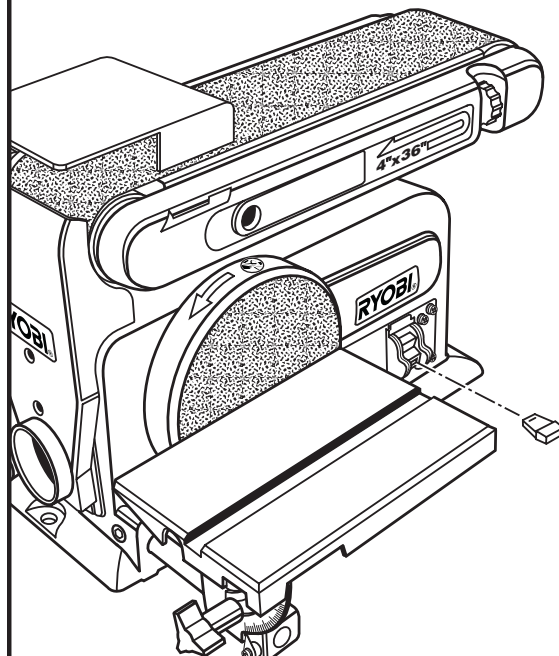
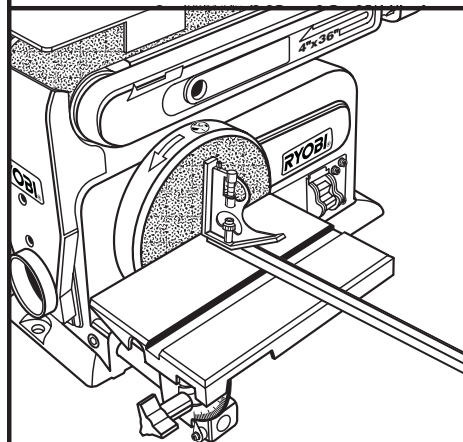
## WARNING:

Do not touch the sanding disc to turn the belt/disc sander OFF. Contact with the sanding disc can result in serious personal injury. See Figure 13.



TRACKING KNOB

Fig. 11



## L SAND

Figure 14

worktable can be tilted from 0° to 30°. To adjust the worktable angle, follow these steps:

1. Loosen the adjustment knob by turning the worktable adjustment knob.

2. Position the worktable nozzle at the desired angle (mm) from the sanding surface.

3. Tighten the adjustment knob by turning the worktable adjustment knob.

## ANG ST AND SURF

### GAU

Figure 15

The gauge is included with your sander. Use the gauge to check the sanding surface.

1. Place the gauge on the sanding surface.

2. The gauge will always measure the workpiece and the left side towards the right side.

## ONTA ND VERTICA

Figure 16

The sander can sand horizontally and vertically. Depending on the workpiece, you can sand with the horizontal or vertical position.

1. The handle is provided into the sander. Loosen the screws by turning the handle.

2. Turn the sanding belt into a vertical position (Figure 16). Vertical position can be set by the set screw.

3. Tighten the sanding belt by retightening the set screw.

4. Sand long workpieces horizontally and sand short workpieces vertically by moving the sanding belt.



# MAINTENANCE

## **⚠ WARNING:**

When servicing use only identical Ryobi replacement parts. Use of any other parts may create a hazard or cause product damage.

## **⚠ WARNING:**

To avoid serious personal injury make sure the belt/disc sander is turned OFF and the cord is unplugged from the power source before performing any maintenance or adjustment.

## GENERAL MAINTENANCE

After using your belt/disc sander, clean it completely and lubricate all sliding and moving parts. Apply a light coat of automotive type paste wax to the worktable to help keep the surfaces clean.

## MOTOR HOUSING

Frequently blow out any dust that may accumulate inside the motor housing.

## LUBRICATION

The ball bearings in this tool are permanently lubricated; they require no further lubrication.

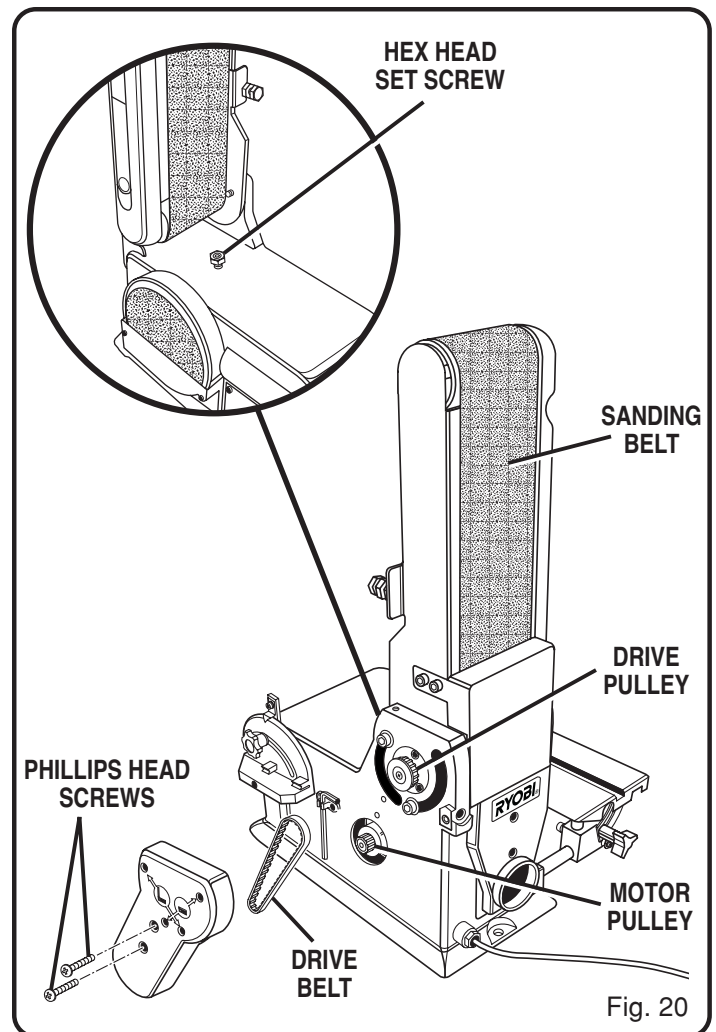
## CHANGING DRIVE BELT

See Figure 20.

- Using a phillips head screwdriver, remove the two screws in the center of the pulley cover.
- Remove the cover.
- Raise sanding belt to the vertical sanding position (see Figure 20).
- Next, loosen the hex head set screw. Raising the motor pulley releases the belt tension.
- Remove the old drive belt.
- Fit the new drive belt on the drive pulley first and then on the motor pulley.
- Test belt tension by squeezing the belt with your fingers.
- Adjust the belt tension with the hex head set screw until there is about 1/4 in. (6 mm) of give.
- Tighten the belt tension nut securely.

**Note:** Excessive tightness on the drive belt may cause increased noise and overload the motor. Excessive looseness on the drive belt may cause the drive belt to fail prematurely and make a severe chattering noise.

- Using a phillips head screwdriver, reinstall the pulley cover and the two phillips head screws. Tighten securely.









# OPERATOR'S MANUAL

## Belt/Disc Sander

### Model BD4600

#### EXTENSION CORD CAUTION

When using a power tool at a considerable distance from a power source, be sure to use an extension cord that has the capacity to handle the current the tool will draw. An undersized cord will cause a drop in line voltage, resulting in overheating and loss of power. Use the chart to determine the minimum wire size required in an extension cord. Only round jacketed cords should be used.

When working with a tool outdoors, use an extension cord that is designed for outside use. This is indicated by the letters "WA" on the cord's jacket.

Before using any extension cord, inspect it for loose or exposed wires and cut or worn insulation.

\*\*Ampere rating

(on tool data plate) 0-2.0 2.1-3.4 3.5-5.0 5.1-7.0 7.1-12.0 12.1-16.0

Cord Length	Wire Size (A.W.G.)					
	16	16	16	16	14	14
25'	16	16	16	16	14	14
50'	16	16	16	14	14	12
100'	16	16	14	12	10	—

**CAUTION:** Keep the extension cord clear of the working area. Position the cord so that it will not get caught on workpiece, tools, or other obstructions while you are working with a power tool.

*\*\*Used on 12 gauge - 20 amp circuit.*

#### • SERVICE

Now that you have purchased your tool, should a need ever exist for repair parts or service, simply contact your nearest Ryobi Authorized Service Center. Be sure to provide all pertinent facts when you call or visit. Please call 1-800-525-2579 for your nearest Ryobi Authorized Service Center. You can also check our web site at [www.ryobitools.com](http://www.ryobitools.com) for a complete list of Authorized Service Centers.

#### • MODEL NO.

The model and serial numbers of your tool will be found on the data plate attached to the tool. Please record the serial number in the space provided below.

- MODEL NUMBER BD4600
- SERIAL NUMBER \_\_\_\_\_

#### RYOBI TECHNOLOGIES, INC.

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